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OHIO EPA COMMENTS ON THE WASTE PIT EE/CA

DOCUMENT DATE 06-28-90

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Section-Page

1. ES-2 third paragraph - DOE DCG's for drinking water should also be considered here because of the potential impact of these discharges on ground water.

2. ES-5, last paragraph: DOE cannot state with absolute certainty at this point in the RI/FS process that the collection and treatment alternative is "consistent with the final remedial actions for both the waste pits (Operable Unit 1) and the regional environmental media (Operable Unit 5)." The RI/FSs for these operable units are not yet complete, nor has a final remedy been selected. DOE needs to qualify this statement.

3. Table ES-1, Page ES-6: Statements on consistency of the capping and collection and treatment alternatives with Operable Units 1 and 5 must be qualified as final remedies for these operable units have not been selected. Under the "Effectiveness: Other Factors" evaluation factor for Alternative #2, it is not clear what is meant by the statement: "damage has little effect."

4. Table ES-1, Page ES-7: Under Alternative #2 for the Evaluation Factor of administrative feasibility of implementability, it is not clear what previous commitment would need to be reversed here. The nature of this "previous commitment" should be specified.

5. 1-1, last paragraph: The reference to the National Contingency Plan (NCP) of "April 1988" should be changed to March 8, 1990, the date on which the final NCP was published in the Federal Register. The same change should also be made to the last paragraph of page ES-1.

6. 2-7 - 2.1. The advanced Wastewater Treatment (AWWT) facility mentioned in paragraph four is the element of Alternative four's treatment train which is intended to remove radioactivity (uranium) from the runoff collected from OU-1. If the AWWT facility's purpose is to remove the primary contaminant of concern, a detailed technical discussion should be provided supporting it's use as part of the preferred alternative. This discussion should provide estimated removal efficiencies for uranium in runoff based on available literature and past operations of similar systems. When will this plant be in operation?

7. 2-24, first paragraph: DOE must explain what exposure assumptions are built into the derived concentration guides (DCGs) and how these guides are consistent (if they are indeed consistent) with the 10^{-6} excess lifetime cancer risk value used by USEPA as the point of departure for assessing long-term cleanup goals.

8. 2-24 last paragraph - See ES-2 Comment #1 above.

9 2-26 second and third paragraphs - Here DOE uses MCL's for drinking water for discharge to Paddy's Run. Therefore, drinking water levels (DCG's for uranium should also be considered in the runoff from the waste pit area.

10. 2-28, first paragraph: Besides the DOE DCG for surface water releases, are there any other state or federal surface water standards or criteria for uranium or other on radiological compounds which are exceeded by the storm water runoff?

11. 2-28, 2.4.2. It is possible that a short duration summer storm could result in a discharge of contaminated stormwater to Paddy's Run without upstream dilution.

12. 2-30. Top of the page. Define what is an unacceptable level of risk?

13. 2-30 2.4.3.3. How can this statement be made? Currently the south plume contains residential and industrial water supply wells that are not fully utilized because of uranium contamination. Discharges such as those from the waste pit area to Paddy's Run have resulted in this contamination.

14. 3-1, Section 3.2, second paragraph: Since the various uranium isotopes mentioned here have potential carcinogenic effects, it is not appropriate to merely look at the sum of the ratios of the observed concentration of each radionuclide to its corresponding DCG as if the only interest is a hazard index-type toxicity effect. Since the DCG for individual radionuclides may already exceed the 10^{-6} excess lifetime cancer risk, the summation of these DCGs, even where their ratio is less than 1, would only increase the cancer risk further above the 10^{-6} level.

15. 4-2, Section 4.2.2., first paragraph: The reference to Figure 2-3 as representing the surface drainage areas is incorrect. The correct figure showing these drainage area is Figure 4-4.

16. 4-2 and 4-4, Section 4.2.2.: The three capping sub-alternatives do not provide sufficient protection against maximum frost penetration. A minimum of 30-36 inches is necessary above any clay or synthetic or synthetic cap at the site to provide for adequate long-term protection of the cap against maximum frost penetration. In addition, any cap over the waste pits would, at a minimum, have to meet the specifications of Ohio Administrative Code (OAC) 3745-27-11 for final closure of sanitary landfills (although, because of the nature of the wastes contained in the pits, capping consistent with USEPA's Minimum Technology Guidance for Final Covers on Hazardous Waste Landfills and Surface Impoundments may be more appropriate).

17. 4-2 4.2.2 This section states that once the cap is installed, net runoff will not change due to the soil cover. This does not include flow through at the clay-liner interface. The soil cover will be less permeable than the present cover and runof will increase. Explain.

18. 4-5 - 4.2.4 - Will any of the proposed drainage ways require lining? How deep are they and what is the underlaying soil?

19. 4-5, first paragraph: Ohio EPA does not agree with DOE's statement in this paragraph that the synthetic liner cap would "enhance any final remedial action which involved capping." A synthetic cap would not enhance any final remedial action which involved capping since it would be unlikely that a membrane liner cap could provide sufficient long-term effectiveness in reducing infiltration into the waste. Additionally, it would not comply with the provisions of OAC 3745-27 for closure of landfills, nor would it be consistent with USEPA's Minimum Technology Guidance, both of which would seem to have some potential applicability to the waste pits.

20. 4-9, 4.2.4 - Treatment efficiencies of the biodentrification towers are not discussed in the description of Remedial Alternative 4. As there are two such towers in place and operating at FMPC, this information should be available. Operations and maintenance issues concerning uranium loading of the towers or tower media should be addressed as well. Also, it is not clear if the effluent water treatment system mentioned here is the AWWT facility.

21. Figure 4-3: The accumulation trenches should be clearly identified as such in the legend.

22. 5-2, last paragraph: A hazard index must be calculated for ingestion of uranium-contaminated sediments to determine if ingestion of these sediments poses any unacceptable risks based on chemical toxicity. Additionally, DOE must evaluate risks to those individuals who may consume contaminated media (i.e., groundwater, sediments) using information provided by USEPA in their Health Effects Assessment Summary Tables. The HEA Summary Tables publication for fourth quarter FY 1989 (OSWER publication #OS-230 or ORD publication #RD-689, dated October 1989) contains quantitative information for evaluating carcinogenic risks from exposures to radionuclides and may yield risk levels which are significantly different than those calculated by DOE.

23. 5-3, second full paragraph: The EE/CA must discuss the basis for and appropriateness of using the DCG 50-year committed effective dose equivalent limit of 4 mrem for setting a removal action limit of 33 ug/l for uranium in groundwater. This 33 ug/l limit represents approximately the 1×10^{-4} excess lifetime cancer risk level for uranium. While this may be acceptable for use in the removal action as an interim action criterion, this is well above the 1×10^{6} risk level that the NCP uses as the point of departure for assessing long-term cleanup goals and will likely be unacceptable to Ohio EPA if it used as a standard for long-term cleanup of either on-site or off-site groundwater. In addition, current USEPA risk assessment guidance requires the use of 70 years as the lifetime exposed individuals, not 50 years as is used in this EE/CA.

24. 5-5 and 5-6, Section 5.2.1: Ohio EPA strongly disagrees with DOE's statement that ". . .no imminent and substantial endangerment currently exists for any off-site receptor. . . ." The Agency also disagrees with the statement that ". . . .the contribution of contaminants to Paddys Run and the aquifer from storm water runoff from the waste storage area does not represent an imminent and substantial endangerment." The DOE interpretation of what constitutes "imminent and substantial endangerment" is a much narrower interpretation than that of either Ohio EPA or CERCLA. These statements should be deleted from the text since their accuracy is very questionable.

25. 5-6, second full paragraph: As previously stated current USEPA risk assessment guidance requires the use of 70 years as the lifetime for exposed individuals, not 50 years.

26. Table 5-2: Ohio Revised Code 6111 should be listed as an action-specific state ARAR for the waste pit area since it prohibits pollution of "waters of the State".

27. 5-8, 5.2.1 - In paragraph one, the calculated concentration value of 80 ug/l, which exceeds the health based limit of 30 ug/l, is dismissed due to its "extreme conservatism". However, no alternative or more representative calculated concentration value is provided.

28. 5-14, 5.4.1 - Table 5-1 is referenced in paragraph two, which compares filtered and unfiltered water samples. The method and conditions under which these samples were filtered is not described. This information might prove to be helpful in evaluating the utility of this comparison.

29. 5-16, 5.4.3 - The environmental benefit of alternative 4 should include some assessment of the uranium removal capability in the Bio-D towers and subsequent activated sludge plant. Will the installation and start up of the package plant result in the sewage sludge from the old trickling filter plant gradually becoming less contaminated with radionuclides? Will routing more uranium contaminated wastewater through the Bio-D system result in more Bio-D sludge?

30. 5-17, 5.4.3 - The AWWT facility is mentioned here for the removal of uranium from the wastewaters. The AWWT facility is explicitly included in Remedial Alternative 4, but not described technically (i.e., flow capacities, or how it will remove uranium from the waste stream).

31. 5-17, 5.4.4 - There is no discussion of what the final remedial alternatives are to provide a basis for evaluating the consistency of this action. Alternatives being considered as final remedies should be presented so that it is clear what the relationship between interim and final alternatives is. As a minimum, the overall objectives of the final actions should be presented (e.g., mitigate leachate generation/migration, stabilize soils, shallow groundwater treatment) to aid in evaluating consistency.

32. 5-19 5.4.8 - The first paragraph in this section states that collection and treatment of stormwater runoff has been an ongoing consideration, and that because of that a major portion of the design effort is completed. However, little

specific design-related information is presented in this document regarding the AWWT facility or the hydraulic design of the collection system. If this information is available it should be provided.

33. 5-19 5.4.9 - This paragraph states that the biodenitrification system is already in place; however, earlier it is stated that two new towers will be constructed in addition to two existing towers, as well as the construction of a biodenitrification surge lagoon. The cost of the AWWT facility is excluded from the cost analysis for this alternative. However, it is not explained how the cost of this facility will be provided (i.e., is it included as a part of another OU remedial action, or as common part of several other remedial actions?).

34. 6-3 Table 6-1 states that no permits are required for onsite actions for alternative 4. Our reading of DOE's plans indicates a need for a PTI for the waste pit perimeter storm water collection sump and probably the collection ditches as well since parts are to be designed as retention structures.

35. Appendix A - HELP MODEL OUTPUT - A discussion of the input to the HELP model should be provided in order to assess the importance of the model output for this scenario. To provide meaningful results, it is important that certain guidelines are followed in using the HELP model, such as avoiding default values and using site-specific daily precipitation values.

36. APPENDIX B - COST ESTIMATE FOR ALTERNATIVE 4
Alternative 4 is the preferred alternative, but the cost estimate is less detailed than any of the others. The estimate is simply a summary, and does not address collection system, biodenitrification towers, AWWT facility, nor operations and maintenance costs. If these costs have truly not been included, it is not clear how this cost estimate can be compared with that for Alternative 5, or any of the other alternatives.

A cost analysis for the preferred alternative in an EE/CA should be detailed enough to clearly include all major elements of the alternative. In order to provide a realistic cost comparison against other alternatives, the present worth cost for the alternative should be calculated as well.

36. GENERAL COMMENT
Has DOE considered the possibility of using an uranium removal system on the water taken from the Bio-D lagoon? Because of the relatively low flow (100 gpm) from this lagoon, a pilot project could reduce overall uranium discharges from the site and provide valuable treatment information for other removal and remedial actions. Please discuss.

GENERAL COMMENT
38. It seems clear, especially since DOE is currently in violation of their own uranium discharge limitations, that this and other removal actions need to include a proposal to reduce overall uranium discharges rather than just increase them.

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